REMARKS/ARGUMENTS

This Amendment is in response to the non-final Office Action mailed July 23, 2009. Before this Amendment, claims 1-3, 5-7, and 9-11 were pending in this application. In this Amendment, claims 1, 5, 7, and 9 have been amended, no claims are canceled, and no new claims are presented. After entry of this Amendment, which is respectfully requested, claims 1-3, 5-7, and 9-11 will still be pending. Reconsideration of the rejected claims is respectfully requested. Claims 1, 5, 7, and 9 have only been amended to ensure compliance with 35 U.S.C. § 101 and § 112, and the amendments to claims 1, 5, 7, and 9 do not raise new issues requiring further search and/or consideration.

I. CLAIM REJECTIONS UNDER 35 U.S.C. § 101

The Office Action rejected all the method claims (claims 1-3 and 9-11) under 35 U.S.C. § 101 because they allegedly do not set forth a particular machine that is specifically configured or programmed to carry out the claimed invention.

Claims 1 and 5, from which claims 2-3 and 6-7 depend, have been amended to recite "using a processor operatively coupled to the computer servers." Applicants submit that the claims now conform to the 'machine or transformation test' advocated by the Federal Circuit in *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008) (en banc), *cert. granted sub nom*, *Bilski v. Doll* (U.S. Jun. 1, 2009) (No. 08-964).

The Office Action rejected all the system claims (claims 5-7) under 35 U.S.C. § 101 because they allegedly were directed to both a method and a system. Claim 5, from which claims 6-7 depend, has been amended to recite "a computer manager executing instructions in a computer program." Claim 7 has also been amended. When a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program, the claim remains statutory irrespective of the fact that a computer program is included in the claim (MPEP 2106.01.I ¶ 3). Thus, the claims recite a singular statutory class, that of a system.

For at least the above reasons, Applicants respectfully request withdrawal of the § 101 rejections of the claims.

II. CLAIM REJECTIONS UNDER 35 U.S.C. § 112 ¶ 2

The Office Action rejected claims 1-3 and 9-11 under 35 U.S.C. § 112 paragraph 2 for indefiniteness because it was allegedly unclear why at least two computer servers are required in light of the operation: "for each task, distributing the task to a computer server of the at least two computer servers and executing the task on the computer server" (claim 1). Applicants would like to point out that there is more than one task, as clearly recited in the claim. The claim recites "a **plurality of tasks**" (emphasis added). "For each" of the plurality of tasks, the task is executed on the computer server to which the task of the plurality of tasks is distributed.

The Office Action rejected claims 5-7 under 35 U.S.C. § 112 paragraph 2 because allegedly the method steps in the apparatus claims rendered them vague and indefinite. Applicants believe in good faith that the amendments to claims 5 and 7 described above ensure compliance with § 112 ¶ 2.

For at least the above reasons, Applicants respectfully request withdrawal of the § 112 ¶ 2 rejections of the claims.

III. CLAIM REJECTIONS UNDER 35 U.S.C. § 103

The Office Action rejected all pending claims (claims 1-3, 5-7, and 9-11) under 35 U.S.C. § 103(a) as being unpatentable over Fong et al. (US 6,366,945) (hereinafter "Fong") in view of Prasanna (US 5,742,821) (hereinafter "Prasanna"). To establish a prima facie case of obviousness, the prior art reference, or references when combined, must teach or suggest all of the claim limitations. Applicants respectfully traverse the rejections because the cited references fail to teach or suggest all of the claim limitations.

Claims 1, 5, and 9. For example, claim 1 recites in part:

> 1. Computer implemented method for allocating to at least two computer servers **a demand forecast application**, the demand forecast application represented by a demand forecast tree having a single top level node with a plurality of branches directly emanating therefrom, the method comprising the steps of:
>
> providing at least two computer servers;
>
> **determining . . . an expected computing time for each branch of the plurality of branches of the demand forecast tree;**

> allocating each branch of the plurality of branches to a task of a plurality of tasks based on the expected computing time for the branch, such that a total expected computing time for each task is substantially equal, wherein the total expected computing time for a task of the plurality of tasks is determined by adding the expected computing time for each branch that is allocated to the task;

(emphasis added). Independent claims 5 and 9 recite some similar limitations.

The primary relied-upon reference, Fong, is directed to allocating resources among scheduling schemes of many types (i.e. space sharing, time sharing, gang scheduling, load sharing) for parallel processing architectures. Although Fong discusses "load sharing" to balance loads among processors (Fong col. 2, lines 45-51), Fong does not disclose a specific technique for processing a **demand forecast application**, let alone a "demand forecast application represented by a demand forecast tree having a single top level node with a plurality of branches directly emanating therefrom" as recited by claim 1.

Although the structure in FIG. 4 of Fong shows a tree-like structure with a "top level partition" (element 40), FIG. 4 does not show "a **demand forecast tree** having a single top level node with a plurality of branches directly emanating therefrom" (emphasis added) as recited in claim 1. Apparently, FIG. 4 shows partitions *after* resources are allocated, not a **demand forecast tree** in which each of the plurality of its branches are allocated to a task based on the expected computing time for the branch as recited.

In the present application, the inventors recognized a novel method for parallel processing a demand forecast application represented by a demand forecast tree. In one embodiment, a demand forecast tree has one level representing a particular consumer item and another level representing a location/outlet at which the item was sold (see specification p. 1, lines 13-19, and p. 4, lines 23-28). Accordingly, the bottom level nodes in the embodiment represent the historical sales data for a particular consumer item at a particular location/outlet. The inventors realized that a demand forecast tree representing a demand forecast application can be effectively regarded as consisting of sub-trees which can be effectively processed independently from one another (see specification p. 2, lines 17-27). Parallelizing demand forecast algorithms based on their tree/sub-tree structure is a novel application of this concept.

Fong does not teach or suggest "a demand forecast application . . . represented by a demand forecast tree" as recited. Fong *teaches away* from getting into the specifics of particular applications by teaching that resource, communication, and synchronization traits of different applications are vastly different from one another (Fong col. 1, lines 57-65) and that it is desirable to have an allocation method which supports multiple scheduling schemes (Fong col. 3, lines 1-3). Fong goes on to describe a Flexible Dynamic Partitioning (FDP) method that allocates and reallocates resources among different types of scheduling schemes (Fong col. 3, lines 11-16), and in doing so, Fong avoids delving into specific parallel processing techniques for specific applications such as a demand forecast applications.

As acknowledged by the Examiner, Fong fails to disclose determining an expected computing time for each branch of the plurality of branches of a demand forecast tree (Office Action p. 7).

Although the secondary reference, Prassana, attempts to equalize node/task finishing times using loop equations (e.g. Prassana col. 8, lines 42-45), Prassana does not disclose teach or suggest "determining . . . an expected computing time for each branch of the plurality of branches of the **demand forecast tree**" (emphasis added) as recited. Prassana mentions neither demand forecast applications nor demand forecast trees. Instead, Prassana is directed to signal processing applications using matrix arithmetic computations (Prassana col. 1, lines 41-45). In Prassana's examples, "[a]ll tasks correspond to matrix operations. Operation sizes are determined by a simple count of the number of adds, multiplies, etc. performed" (Prassana col. 9, lines 2-4). Thus, Prassana's estimates of computation time for linear algebra matrices are distinct from increasingly sophisticated mathematical models for "determining . . . an expected computing time for each branch of the plurality of branches of the demand forecast tree" as recited.

Because neither Fong nor Prassana teaches all the above limitations, no combination of the references can render the claims unpatentable under § 103. For at least the above reasons, Applicants respectfully request withdrawal of the rejections of the claims and all claims depending therefrom.

Claims 2-3, 6-7, and 10-11. No reasons for rejecting claims 6-7 were given in the Office Action (see page 8 of Office Action). Claims 2-3 and 10-11, which were rejected "for

the same reasons set forth" in the rejections of claims 6-7, were likewise not addressed. Applicants respectfully request the Examiner to provide his reasoning for the rejections of the claims so that the reasons may be fairly addressed, or in the alternative indicate allowance of subject matter in the claims.

IV. CLAIM AMENDMENTS

Unless otherwise specified, amendments to the claims are made for purposes of clarity, and are not intended to alter the scope of the claims or limit any equivalents thereof. The amendments are supported by the specification and do not add new matter.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,

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